

"This plant is generally known as living rock. It is dull gray to brown in color and grows on dry stony ground and, when not in flower, is easily mistaken for the rocks which surround it."¹

Roseocactus lloydii (Rose) Berger

Ariocarpus lloydii Rose, Contr. U. S. Nat. Herb. 13: 308. pl. 62. 1911. Zacatecas.

This species is very distinct from the preceding. In *R. lloydii* the tubercles are without the linear depression along the margin, but are raised towards the longitudinal cleft, almost as if they were compressed. Moreover, the exposed end of the tubercles is broadly rhomboid rather than deltoid. It is of more southern distribution than *R. fissuratus*.

Roseocactus kotschoubeyanus (Lemaire) Berger

Anhalonium kotschoubeyanum Lemaire, Bull. Cercle Confér. Hort. Dép. Seine 1842.

Anhalonium sulcatum Salm-Dyck, Cact. Hort. Dyck. 1849: 5. 1850.

Anhalonium fissipedum Monv. Cat. 1846 ex Labour. Monogr. 154. 1858.

Stromatocarpus kotschubeyi Karw. ex Lem. Ill. Hort. 16: Misc. 72, 1868, name only.

Ariocarpus sulcatus K. Schumann, Monatschrift. f. Kakteenk. 8: 9. 1897.

Ariocarpus kotschubeyanus K. Schumann in Engler and Prantl, Nat. Pflanzenfam. Nachtr. 259. 1897.

Central Mexico.

In this, the smallest of the three species, the triangular surface of the small tubercles is slightly rough; the flowers arise just a little below the triangular top of the tubercle, from the areole but far away from the axil. This species has been recently introduced rather frequently.

BOTANY.—*Notes on Peruvian Urticaceae of the Marshall Field exploration.*¹ ELLSWORTH P. KILLIP, U. S. National Museum.

During the course of biological exploration in Central and South America conducted recently by the Field Museum of Natural History through the generosity of Captain Marshall Field, extensive botanical collections have been made in Peru by Macbride and Featherstone in 1922 and by Macbride and Bryan in 1923. The material of several families has been shared with the United States National Museum, and the present paper is essentially a report upon the family Urticaceae.

The South American Urticaceae have received little critical attention since the publication of Weddell's treatment of the family in De Candolle's Prodrômus.² Many of the species, particularly those of the

¹ BRITTON AND ROSE, *The Cactaceae* 3: 83. 1922.

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² 16^t: 32-235. 1869.

genus *Pilea*, are of limited range, and study of these two collections, as well as of other Andean material recently received by the National Museum,³ has proved of the greatest interest.

Urtica magellanica Poir. Lam. Encycl. 4: 221. 1816.

Colombia to Chile.

Matucana, 2500 meters (174). La Oroya, 3700 meters (974).

Weddell's description of this is probably too inclusive, certain species which are cited in synonymy probably being distinct. These two Peruvian specimens seem to be typical *U. magellanica*.

Urtica ballotaefolia Wedd. Ann. Sci. Nat. III. Bot. 18: 197. 1852.

Colombia, Peru.

In clumps at base of river cliffs, Llata, 2200 meters, August, 1922 (2268).

Recognized by its elongate androgynous spikes. A much coarser plant than the preceding.

Urtica macbridei Killip, sp. nov.

Plant herbaceous, about 1.5 meters high; stem erect, subquadrangular, sulcate, finely pilosulous or almost glabrous near base, armed with a few short, weak bristles, few-leaved, the internodes 6 to 20 cm. long; stipules in pairs, subreniform, 3 to 5 mm. long, 6 to 8 mm. wide, free to base, densely pilosulous; petioles 2 to 6 cm. long, slender, widely divaricate or sub-reflexed, pilosulous-tomentose; leaves cordate-ovate, large for the genus, 6 to 12 cm. long, 4 to 8 cm. wide, tapering to an obtuse or acutish acumen, crenate from base to apex, 5 to 7-nerved at base, reticulate-veined (nerves and veins prominent beneath, paler than rest of blade), the upper surface pilosulous on the nerves, marked with minute linear and punctiform cystoliths, bearing numerous short inconspicuous bristles, otherwise glabrous, the under surface densely appressed-brown hirsutulous on the nerves and veins; plants monoecious, the flower-spikes unisexual; staminate spikes borne at the upper nodes, 12 to 15 cm. long, finely pilosulous, sparingly armed with weak bristles, the flowers in dense, more or less contiguous glomerules 4 to 5 mm. thick; perianth segments ovate, about 1 mm. long, obtuse, concave, pilosulous without; stamens about 1.5 mm. long; pistillate spikes borne at the lower nodes, 3 to 3.5 cm. long, very slender, pilosulous and armed with weak bristles, the flowers in small, often contiguous glomerules 2 to 3 mm. thick; achenes ovate, 1 mm. long, compressed, glabrous.

Type in the herbarium of the Field Museum, no. 535353, collected at Muña, on the trail to Tambo de Vaca, Peru, altitude about 2400 meters, June 5 to 7, 1923, by J. F. Macbride (no. 4271). A specimen of this is also in the National Herbarium.

This species apparently has no close relatives in America. The long staminate spikes suggest *U. ballotaefolia* Wedd., but the inflorescences of *U. ballotaefolia* are androgynous while those of *U. macbridei* are unisexual. From *U. dioica* and the species that have been segregated from it, *U. macbridei* is at once distinguished by the shape of the leaves, length of the floral spikes, and general habit. *Urtica morifolia* Poir., of the Azores, is apparently the nearest relative of this new species.

³ See KILLIP; *New Urticaceae from Colombia*. This JOURNAL 13: 354-360. 1923.

Urera laciniata Wedd. Ann. Sci. Nat. III. Bot. 18: 203. 1852.

Panama to Peru.

Sunny, gravelly river flat, Pozuzo, 600 meters, June, 1923, "about 6 ft. high" (4703). Sandy flat, La Merced, 600 meters, August, 1923, "Coarse perennial, or woody below, to 20 ft. high. Stalks 3-5, rarely fewer. Flowers white. Wounds from spines cause swelling." (5315).

Distinguished by its deeply laciniate leaves.

Urera baccifera (L.) Gaud. in Freyc. Voy. Bot. 497. 1826.

Mexico and West Indies to Peru and Brazil.

Muña, 2200 meters, May, 1923. "Tree-shrub. Inflorescence red, with stinging pubescence. Fruits white." (3910).

A common tree in tropical America, distinguished from other species of this genus by the large sinuate serrations of the leaves.

Pilea microphylla (L.) Liebm. Dansk. Vid. Selsk. Skrivt. V. 2: 296. 1851.

Throughout tropical America.

Steep grass-shrub slopes, Piedra Grande, station near Rio Santo Domingo, 1600 meters, May, 1923 (3690).

A common plant in various habitats in the tropics, variable in size and habit. Leaves ovate or obovate. Many segregates have been proposed on slight differences.

Pilea thymifolia (H. B. K.) Blume, Mus. Bot. Lugd. Bat. 2: 44. 1855.

Urtica thymifolia H. B. K. Nov. Gen. & Sp. 2: 37. 1817.

Pilea globosa Wedd. Ann. Sci. Nat. III. Bot. 18: 208. 1852.

Southern Colombia to Peru.

Rock-outcrop, Huanuco, 2200 meters, April, 1923 (3512). Huacachi, station near Muña, May, 1923 (3868, 4087). In shallow soil on sunny, sloping rocks, Matucana, 2500 meters, April-May, 1922 (447).

A plant with much the habit of the preceding, but with nearly orbicular leaves. The name *Pilea globosa* has generally been applied to this species because of the inappropriateness of the earlier name.

Pilea cordifolia Killip, sp. nov.

Slender, repent herb, leafy throughout, especially at the ends of the branches; stems villosulous; stipules ovate, 1 to 1.5 mm. long, about 1 mm. wide, obtuse, persistent; petioles slender, 1 to 2 mm. long; leaves cordate, up to 4 mm. long and 5 mm. wide, obtuse at apex, entire or slightly undulate and, when dry, often revolute at margin, inconspicuously 3-nerved, sparsely villosulous on both surfaces, completely covered with punctiform cystoliths, black when dry; plants monoecious; staminate flowers borne singly or in pairs in the axils of the leaves on slender peduncles 3 to 6 mm. long, the perianth segments narrowly ovate, 1.5 mm. long, concave, the stamens 1 mm. long; pistillate flowers borne in a 4 to 6-flowered umbel on a slender peduncle 2 to 3 mm. long, the perianth segments unequal, the middle ovate, 0.5 mm. long, the lateral minute; achene ovoid, 0.7 mm. long.

Type in the herbarium of the Field Museum, no. 535481, collected in mossy uplands, Tambo de Vaca, Peru, altitude about 4200 meters, June 10-24, 1923, by J. F. Macbride (no. 4395). A specimen of this collection is in the U. S. National Herbarium also.

This small plant has the general appearance of *P. microphylla* and *P. thymifolia*. The leaves, the shape of the cystoliths, and the pubescence distinguish it readily from these two species and their close relatives.

Pilea diversifolia Wedd. Ann. Sci. Nat. III. Bot. 18: 212. 1852.

Peru.

In patch at edge of shady brook, Muña, 2200 meters, May 23–June, 1923 (3984).

A much branched herb, with small leaves, those of a node both dissimilar and unequal.

Pilea minutiflora Krause, Bot. Jahrb. Engler 37: 529. 1906.

Peru (known hitherto only from the type locality, Huacapistana, Province of Tarma, Department of Junin).

Mossy ledges, Huariaca, 2900 meters, April, 1923, "Indians take as remedy to cause forgetfulness for unrequited love." (3126.)

This and the following species belong to the long-peduncled group of the section *Glabratae*. *Pilea minutiflora* is related to *P. anomala*. Wedd.

Pilea dauciodora Wedd. Ann. Sci. Nat. III. 18: 223. 1852.

Costa Rica and West Indies to Peru, Bolivia, and Venezuela.

Wet bank, Huacachi, station near Muña, about 2000 meters, May, 1923 (4117).

Low creeping herb with leaves up to 3 cm. long.

Pilea delicatula Killip, sp. nov.

Plant slender, glabrous throughout, the stem repent, at length erect, 8 to 10 cm. high; stipules ovate, 1 to 1.5 mm. long, abruptly acuminate; petioles of a node unequal, the longer 4 to 8 mm. long, the shorter 2 to 5 mm.; leaves crowded near end of stem, those of a node similar and nearly equal, 1 to 1.5 cm. long, 0.5 to 1 cm. wide, acute, rounded or subcuneate at base, dentate-serrate (6 to 10 teeth on each side, imbricate toward apex, mucronate), 3-nerved (lateral nerves inconspicuous, barely reaching middle of blade), bearing on upper surface, mainly along nerves, a few minute linear cystoliths, on the under surface numerous inconspicuous punctiform cystoliths; plants apparently dioecious, the staminate not seen; pistillate flowers borne in globose glomerules 3 to 4 mm. in diameter, on peduncles 4 to 10 mm. long; perianth segments subequal, about 1 mm. long; achenes broadly ovate, about 1 mm. long and wide.

Type in the Field Museum, no. 535486, collected in a wet mossy wood, at Tambo de Vaca, Peru, altitude 4000 meters, June 10–24, 1923, by J. F. Macbride (no. 4400). A specimen of this collection is also in the U. S. National Herbarium.

Resembling *P. dauciodora* Wedd. in size and habit *P. delicatula* differs in having larger and sharper teeth on the margin of the leaves, less numerous and less conspicuous cystoliths, which are punctiform, not linear, on the under surface of the leaves, and a more compact, globose inflorescence. This plant also resembles *P. lamioides*, a species of the short-peduncled group.

Pilea tarmensis Killip, sp. nov.

Erect herb, about 60 meters high, glabrous throughout; stem terete, striate, and woody below, subquadrangular and succulent above, leafy toward apex, naked below; stipules small, triangular-ovate, 2 to 3 mm. long, 2 mm. wide, obtuse; petioles 1 to 2 cm. long (or longer?), those of a node subequal or one a third longer than the other; leaves of a node subequal and similar, ovate-elliptic, 8 to 14 cm. long, 4 to 6 cm. wide, obtuse, auriculate at base, crenate-serrate from base to apex, 3-nerved (lateral nerves

extending to apex of blade), covered on both surfaces with yellowish fusiform, linear, and punctiform cystoliths, in addition finely black-punctate beneath; plants dioecious; staminate flowers in dense clusters in a diffuse, long-peduncled panicle (peduncle up to 5 cm. long), short-pedicel, the perianth segments ovate, 1 mm. long, mucronulate; pistillate inflorescence not seen.

Type in the herbarium of the Field Museum, no. 536847, collected among rocks in a sunny shrubby canyon, near Huacapistana, Province of Tarma, Peru, altitude about 2800 meters, September 8, 1923, by J. F. Macbride (no. 5822).

In the absence of pistillate plants it is difficult to determine the exact relationship of this species. Weddell's subdivision of both the section *Glabratae* and the section *Pubescentes* on the basis of the peduncles of pistillate inflorescence being longer or shorter than the subtending petioles is not wholly satisfactory. Probably this species is nearest *P. anomala* Wedd., though it differs in having broader leaves with obtuse apices and blunter teeth, and much denser flower clusters. Among the short-peduncled species it comes nearest *P. multiflora* (Poir.) Wedd.

***Pilea macbridei* Killip, sp. nov.**

Plant about 1 meter high, glabrous throughout; stem woody, terete, nearly destitute of cystoliths, much branched above, the lower internodes 3.5 to 4 cm. long, those near the ends of the branches 1.5 to 2 cm.; stipules ovate, about 5 mm. long, 4 mm. wide, rounded at apex, soon deciduous; petioles 4 to 5 mm. long, geniculate near base, densely covered with linear cystoliths; leaves ovate or ovate-elliptic, 3 to 5 cm. long, 1.5 to 2.5 cm. wide, acuminate, shallowly cordate at base, serrate from base to apex (teeth averaging 2 mm. long), 3-nerved (nerves reaching the upper quarter of blade), faintly marked with fine linear cystoliths above, copiously covered with minute punctiform cystoliths and punctate with a few dark spots beneath, the upper surface very dark green, when dry, often yellow green along the nerves; plants monoecious; staminate heads cymose, about 5 mm. wide, borne 1 to 3 on slender peduncles 2 to 3.5 cm. long which arise in the axils of the upper leaves; perianth purple-tinged, its segments minute; pistillate heads few-flowered, about 4 mm. wide, borne in the axils of the lower leaves on peduncles 6 to 8 mm. long; perianth segments unequal, the middle ovate, 1.2 mm. long, eucullate, the lateral barely half as long; achenes broadly ovoid or nearly orbicular, 1 mm. long, punctulate.

Type in the Field Herbarium, no. 536217, collected at Villeabamba, hacienda on the Río Chinchao, Peru, altitude about 2800 meters, July 17-26, 1923, by J. F. Macbride (no. 5179).

The inflorescence of this plant resembles that of *P. elliptica* Hook. f., of Chile, and in Weddell's monograph, *P. macbridei* would key out close to *P. elliptica*. However, in general habit and shape and texture of the leaves the two species are very distinct.

***Pilea marginata* Wedd. Arch. Mus. Paris 9: 238. 1856-57. Peru.**

Rocky trail edge through montaña, Pampayacu, hacienda at mouth of Río Chinchao, about 1100 meters, July, 1923 (5086).

Herb, about 80 cm. high, the leaves coriaceous, minutely repand-serrulate along upper half of margins.

***Pilea verrucosa* Killip, sp. nov.**

Shrub, about 1 meter high; stem terete and glabrous below, subquad-rangular, ferruginous and verrucose above, the internodes about 2 cm. long; stipules small, orbicular, 2 mm. long; petioles of a node equal or one half as long as the other, 3 to 8 mm. long; leaves ovate or subrhombic, 2 to 3.5 cm. long, 1 to 2.5 cm. wide, acute, subauriculate and often slightly asymmetrical at base, crenate-serrate (about 15 serrations to a side), triplinerved (lateral nerves extending to upper quarter of blade), subcoriaceous, glabrous, bearing very minute punctiform cystoliths on both surfaces; plants monoecious; staminate flowers borne in much-branched, densely-flowered panicles 2.5 to 4 cm. long, in the axils of the upper leaves (common peduncles about 1 cm. long), subsessile, very small, barely 0.5 mm. long, the segments acute; pistillate flowers in sessile or subsessile, densely-flowered cymes in the axils of the middle leaves, the perianth segments subequal, 1 mm. long, concave; achenes ovoid, 1.2 mm. long, 0.6 mm. wide, narrowed toward apex.

Type in the Field Museum, no. 536240, collected at Villcabamba, hacienda on the Río Chinchao, Peru, altitude about 2800 meters, July 17-26, 1923, by J. F. Macbride (no. 5201).

In many respects this plant agrees with the description of *P. suffruticosa* Krause. Both are shrubs and the upper branches apparently have the same peculiar roughness. The leaves of *P. suffruticosa*, however, are ovate-elliptic, tapering to the base, 5 to 8 cm. long, and long-petioled, while in *P. verrucosa* the longest leaf present is but 3.5 cm. long, and the leaves are ovate and auriculate at the base. The staminate inflorescences of *P. suffruticosa* are only half as long as the leaves and the individual flowers are long-pedicellate. In *P. verrucosa* the staminate inflorescences fully equal the leaves and the flowers are subsessile.

***Pilea orbiculata* Killip, sp. nov.**

Low succulent herb, glabrous throughout, the stem repent, rooting at nodes, the branches erect or suberect, simple, up to 15 cm. high, longitudinally marked with fusiform cystoliths; stipules broadly ovate, 2 mm. long, 1 mm. wide, obtuse, connate at base, persistent; leaves crowded near apex of plant, those of a pair similar and subequal, orbicular or broadly ovate-orbicular, 7 to 10 mm. long, 9 to 12 mm. wide (leaves near middle of stem 5 mm. long and wide), rounded or slightly narrowing at apex, rounded or truncate at base, mucronate-serrulate except at entire base, short-petioled (petioles 4 to 6 mm.), often cartilaginous-thickened at margin, inconspicuously 3-nerved, faintly marked on the upper surface with minute fusiform cystoliths, almost destitute of cystoliths beneath; plants dioecious, the staminate not seen; pistillate flowers borne in small, densely-flowered, sessile or subsessile cymes 2 to 5 mm. long, shorter than the subtending petioles; perianth exteriorly covered with linear cystoliths, the segments unequal, the middle segment ovate, 5 mm. long, the lateral segments less than half as long; achene ovoid, about 5 mm. long, compressed.

Type in the herbarium of the Field Museum, no. 534560, collected on mossy ledges, Chasqui, Peru, April 10, 1923, by J. F. Macbride (no. 3289).

The following points of difference are to be noted between this species and its nearest relative *P. pusilla* Krause, both of the short-peduncled group of the section *Glabratae*: *P. pusilla*—leaves crenate, cystoliths punctiform, petioles 8 to 12 mm. long; pistillate cymes on erect, slender peduncles, equaling or

slightly longer than petioles; achenes 1.2 mm. long; *P. orbiculata*—leaves mucronate-serrulate, cystoliths fusiform, petioles 4 to 6 mm. long; pistillate cymes sessile or subsessile, shorter than petioles; achenes 0.5 mm. long.

Pilea lamioides Wedd. Ann. Sci. Nat. III. Bot. 18: 213. 1852.

Peru.

Rocky hillside, San Geronimo, Lima, about 150 meters, September, 1923 (5917).

Small plant, 5 to 10 cm. high, with the aspect of *Lamium purpureum*.

Pilea pulegifolia (Poir.) Wedd. Ann. Sci. Nat. III. Bot. 18: 213. 1852.

Urtica pulegifolia Poir. Encycl. 4: 224. 1816.

Peru.

Thickets, Chaglla, about 2800 meters, May, 1923 (3650).

Stem elongate, lax (?), much branched; leaves of a node similar but very unequal, the larger up to 2.5 cm. long; pistillate flowers in a loosely-flowered panicle about 8 mm. wide, the peduncles filiform, 1 to 1.5 cm. long; perianth-segments unequal, the lateral less than half as long as the middle segment; achenes suborbicular, 1 mm. long and wide, finely papillose.

The dimension of the leaves of Macbride's specimen is twice that given by Weddell in his description of *P. pulegifolia*, but in general habit, leaf shape, and cystolithic markings this specimen agrees well with Weddell's diagnosis. Weddell evidently saw only staminate plants, while Macbride's specimens are all pistillate.

DOUBTFUL SPECIMENS OF THE GENUS PILEA

No. 3770. Yanano, about 1800 meters, May, 1923. Coarse, erect herb, glabrous throughout, the leaves oblong-elliptic, up to 15 cm. long, 4 cm. wide, narrowing to a rather broad base (petioles stout, 2.5 mm. long).

This plant is nearest *P. goudotiana* Wedd., a species cultivated in Colombia, known to me only by description. In Macbride's specimen, the inflorescence, probably pistillate, is not in a condition for satisfactory determination of the plant.

No. 4826. Cushi, about 1600 meters, June, 1923. Erect succulent perennial herb, "4 feet" high; leaves long-petioled, oblong-elliptic, up to 16 cm. long, 6 cm. wide; inflorescence undeveloped.

Nearest *P. spruceana* Wedd., but larger in every way.

Boehmeria aspera Wedd. Arch. Mus. Paris 9: 349, pl. 11, f. 24-28. 1856-57.

Colombia, Peru.

Steep, grass-shrub slopes, Piedra Grande, station near Río Santo Domingo, May, 1923 "Shrub 2-5 feet" (3698).

Readily recognized by its coriaceous, bullate-rugose, lanceolate leaves.

Boehmeria pavonii Wedd. Ann. Sci. Nat. IV. 1: 202. 1854.

Peru and Bolivia.

La Merced, about 600 meters, August, 1923. "Slender open shrub-tree" (5268).

Leaves long-acuminate, the alternate ones often dimorphic; flowers clusters small for the genus.

Boehmeria weddelliana Killip, nom. nov.

Boehmeria hirta Wedd. Ann. Sci. Nat. IV. 1: 202. 1854, not *Boehmeria hirta* Pers. (1807).

Peru.

Sunny stream edge, Muña, about 2200 meters, May-June, 1923. "Compact 5 ft. shrub" (4012).

This is apparently the only South American species of *Boehmeria* with both axillary flower clusters and opposite leaves. The plant is densely hirsute throughout.

Pouzolzia aspera Wedd. in DC. Prodr. 16: 233. 1869.

Peru and Bolivia.

Steep grassy, rocky slope, canyon of the Río Huallaga, below Río Santo Domingo, about 1200 meters, June, 1923, "Dense 2-3 ft. shrub" (4238).

Leaves lanceolate, entire, rough above, cano-tomentose beneath.

Myriocarpa densiflora Benth. Bot. Voy. Sulphur 169. 1844.

Colombia to Bolivia and Peru.

Forest, Cushi, about 1600 meters, June, 1923, "Rather open 10 ft. shrub-tree" (4838).

A second specimen, collected at La Merced, about 600 meters altitude, August, 1923 (5454), with larger leaves rugose above, and more densely tomentose, is the subspecies *dombeyana* Wedd.

The differences between *Myriocarpa densiflora* and *M. stipitata*, described at the same time by Benthham, are very slight, and the two may not be distinct. In such case the latter name must be used, but in the absence of type material or authenticated specimens it does not seem advisable at this time to treat them as conspecific.

Myriocarpa laevigata Killip, sp. nov.

Compact tree or shrub, up to 5 meters high, glabrous, except inflorescence, petioles, and tips of branches, the bark of the younger branches cinerous; stipules ovate-lanceolate, 6 to 8 mm. long, 4 to 5 mm. wide, acutish; petioles up to 5 cm. long, canaliculate, appressed-pilosulous or nearly glabrous; leaves obovate or ovate, 7 to 14 cm. long, 4 to 8 cm. wide, abruptly acuminate or acute at apex, subcuneate or rounded at base, shallowly undulate-serrulate above middle, subentire in lower half, triplinerved with 3 or 4 ascending secondary nerves on each side of the mid-nerve, reticulate-veined, coriaceous, glabrous above, beneath often densely pilose in the axils of the principal and secondary nerves, and sparsely pilosulous along midrib, otherwise glabrous, densely covered on both surfaces with fusiform and punctiform cystoliths, the nerves on under surface bearing longer, linear cystoliths; plants dioecious (?); staminate plants not seen; pistillate inflorescences solitary or in pairs in the axils of the leaves, twice dichotomous, the branches slender, wiry, pilosulous, 5 to 8 mm. long, the primary branches slightly shorter, the ultimate elongate, 10 to 15 cm. long, averaging 3 mm. thick; sepals 2, about 0.5 mm. long, recurved, glabrous; achene ovate-elliptic, stipitate, about 1.5 mm. long (including stipe), compressed, slightly hispidulous, setose at margin (setae subequal), the body dark brown, the stipe pale.

Type in the herbarium of the Field Museum, no. 534987, collected at Muña, Peru, altitude about 2300 meters, May 23 to June 4, 1923, by J. F. Macbride (no. 3925). A specimen of this collection is also in the National Herbarium.

Additional specimens examined:

PERU: Yanano, about 1800 meters, *Macbride* 3783. Cueva Grande, near Pozuzo, about 1100 meters, *Macbride* 4811.

The smooth, coriaceous, nearly entire leaves distinguish this from the other Peruvian species of *Myriocarpa*. The foliage more nearly resembles that of *M. heterostachys* Donn. Smith, a plant of Guatemala, though in that species the leaves are rather long-attenuate at the apex, thinner, and the cystolithic markings are different.

Phenax hirtus minor Wedd. in DC. Prodr. 16¹: 235³⁹. 1869.

Phenax urticaefolius minor Wedd. Arch. Mus. Paris 9: 496. 1856-57.
Peru.

Shrubby canyon side, Matucana, about 2500 meters, March, 1923, "Loosely branched shrub, about 4 ft. Flowers pink" (2883). Brook margin, Matucana, April-May, 1922, "Woody below. Leaves glossy above." (233.)

Leaves only 1.5 to 3 cm. long; otherwise apparently the same as typical *P. hirtus* Sw., a common tropical plant.

Phenax laevigatus Wedd. Ann. Sci. Nat. IV. Bot. 4: 192. 1854.

Colombia to Peru.

Stream-canyon thicket, Mito, about 2700 meters, July, 1922, "To 4 ft., erect; branches spreading, 'spray-like'" (1503). Huacachi, station near Muña, 2000 meters, May, 1923 (4153).

Leaves coriaceous, glabrous except, occasionally, on the nerves beneath.

Phenax laxiflorus Wedd. Arch. Mus. Paris 9: 499. 1856-57.

Peru.

Muña, along trail to Tambo de Vaca, about 2500 meters, June, 1923 (4282).

Readily recognized by the loosely-flowered clusters. Usually more densely pubescent than the other Peruvian species of *Phenax*.

Parietaria debilis Forst. Fl. Ins. Austr. Prodr. 73. 1786.

Widely distributed in both hemispheres, from sea level to high altitudes.

In moist soil on rock ledges of canyon, Matucana, about 2500 meters, April-May, 1922, "Stems clinging to face of rock," (262). Upper slopes of seaside hills, Chorrillos, near Lima, September, 1923 (5870). Sandy loams along the sea, Turin, Lima, about 60 meters, September, 1923 (5968).

PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES

THE PHILOSOPHICAL SOCIETY

909TH MEETING

The 909th meeting was held at the Cosmos Club Saturday, November 29, 1924, with President HAZARD in the chair and 55 persons in attendance.

Program: W. W. COBLENTZ: *The measurement of planetary temperatures.* (Illustrated.)

Author's abstract: In 1921 a new method was used at the Lowell Observatory, Flagstaff, Arizona, for determining the temperature of stars. The novelty of the method consisted in separating the radiation into spectral components by means of transmission screens, and measuring the energy by means of stellar thermocouples similar to those used at the Lick Observatory, Mt. Hamilton, California, in 1914.